WHAT IS CLAIMED IS:

1. A surgical cutting instrument for use with a motor having a drive mechanism, the instrument comprising:

an outer tube defining a proximal region terminating at a proximal end, a distal region terminating at a distal end, and a lumen extending from the proximal end to the distal end, the lumen being defined by an inner surface of the outer tube;

an inner wire assembly received within the lumen, the inner wire assembly including a proximal section and a distal section, wherein the proximal section extends proximally from the proximal end of the outer tube;

a cutting tip connected to the distal section of the inner wire assembly, wherein at least a portion of the cutting tip extends distal the distal end of the outer tube;

a coupling chuck secured to the proximal section of the inner wire assembly, wherein the coupling chuck is adapted for connection to a drive mechanism of a motor; and

a housing maintaining the proximal region of the outer tube and the coupling chuck, the housing being adapted for connection to a motor;

wherein a rotating journal bearing is established between an outer surface of at least a portion of the inner wire assembly and at least a portion of the inner surface of the outer tube distal the housing upon rotation of the inner wire assembly relative to the outer tube.

2. The instrument of claim 1, wherein the instrument is characterized by the absence of a ball bearing assembly between the outer tube and the inner wire assembly.

3. The instrument of claim 1, further comprising:

a lubricant disposed between the outer surface of the inner wire assembly and the inner surface of the outer tube;

wherein upon rotation of the inner wire assembly relative to the outer tube, the lubricant is adapted to create a hydrodynamic effect between the inner wire assembly and the outer tube.

4. The instrument of claim 1, wherein the inner wire assembly is a homogenous wire.

5. The instrument of claim 4, wherein the wire is a tool steel.

6. The instrument of claim 4, wherein the rotational journal bearing is established along an entirety of a length of the outer tube distal the housing.

7. The instrument of claim 4, wherein the outer tube defines a first curved segment and further wherein upon final assembly, the wire assumes a shape of the first curved segment.

8. The instrument of claim 7, wherein the outer tube further defines a second curved segment apart from the first curved section, and further wherein upon final assembly, the wire assumes a shape of the second curved segment.

9. The instrument of claim 4, wherein at least a portion of the outer tube distal the housing has a maximum outer diameter of not more than 2 mm.

10. The instrument of claim 4, wherein the wire has an outer diameter of not more than 0.8 mm.

11. The instrument of claim 4, wherein an exposed portion of the wire extends distally from the distal end of the outer tube, and further wherein a length of the exposed portion is not greater than 2.54 mm.

12. The instrument of claim 4, wherein the distal region of the outer tube tapers distally in diameter to the distal end.

13. The instrument of claim 1, further comprising:

a sealing tip connected to the distal region of the outer tube, at least a portion of the sealing tip defining an inner diameter that is less than a diameter of the lumen of the outer tube.

14. The instrument of claim 13, wherein the sealing tip is a ceramic body.

15. The instrument of claim 13, wherein the sealing tip is a tubular body having a proximal portion and a distal portion, the distal portion defining a relaxed state diameter that is less than a diameter of the inner wire assembly, and further wherein upon final assembly, the distal portion of the sealing tip is forced to an expanded state diameter via contact with the inner wire assembly.

16. The instrument of claim 13, wherein the sealing tip is a tubular body shrunk fit to the outer tube and a portion of the inner wire assembly.

17. The instrument of claim 1, further comprising:

a cooling sleeve disposed over at least a portion of the outer tube.

18. The instrument of claim 1, wherein the inner wire assembly further defines an intermediate section comprised of a flexible, multi-stranded coil of wires, the

intermediate section being connected at opposite ends thereof to the proximal and distal sections, respectively.

19. The instrument of claim 18, wherein the proximal and distal sections are wires.

20. The instrument of claim 18, wherein at least a portion of the rotating journal bearing is established between the inner surface of the outer tube and the flexible wound coil of wires.

21. The instrument of claim 18, wherein the outer tube defines a curved segment, and further wherein upon final assembly, the flexible coil of wires assumes a shape of the curved segment.

22. The instrument of claim 1, wherein the inner wire assembly includes a first portion and a second portion, the first portion being a rigid wire and the second portion being a flexible wire, and further wherein the second portion is connected to, and extends distally from, a distal end of the first portion, the cutting tip being connected distal a distal end of the second portion.

23. The instrument of claim 22, wherein the outer tube defines a curved segment, and further wherein upon final assembly, the second portion of the inner wire assembly assumes a shape of the curved segment.

24. The instrument of claim 23, further comprising:

an intermediate tube disposed between the inner surface of the outer tube and an outer surface of the second portion of the inner wire assembly along the curved segment of the outer tube.

25. The instrument of claim 22, wherein the second portion has a diameter less than a diameter of the first portion.

26. A surgical cutting instrument for use with a motor having a drive mechanism, the instrument comprising:

an outer tube defining a proximal region terminating at a proximal end, a distal region terminating at a distal end, and a lumen extending from the proximal end to the distal end, the lumen being defined by an inner surface of the outer tube;

an inner wire assembly received within the lumen, the inner wire assembly including a proximal section and a distal section, wherein the proximal section extends proximally from the proximal end of the outer tube;

a grease lubricant disposed between the inner surface of the outer tube and an outer surface of the inner wire assembly, the grease lubricant exhibiting a dynamic viscosity of not less than 100 mm^2/s at 40° C;

a cutting tip connected to the distal section of the inner wire assembly, wherein at least a portion of the cutting tip extends distal the distal end of the outer tube;

a coupling chuck secured to the proximal section of the inner wire assembly, wherein the coupling chuck is adapted for connection to a drive mechanism of a motor; and

a housing maintaining the proximal region of the outer tube and the coupling chuck, the housing being adapted for connection to a motor;

wherein a hydrodynamic, rotating journal bearing is established by the grease lubricant between an outer surface of at least a portion of the inner wire assembly and the inner surface of the outer tube distal the housing upon rotation of the inner wire assembly relative to the outer tube.

27. The instrument of claim 26, wherein the grease lubricant exhibits a dynamic viscosity in the range of 150 – 250 mm^2/s at 40°C.

28. The instrument of claim 26, wherein the grease lubricant is a synthetic hydrocarbon thickened with silica.

29. The instrument of claim 26, wherein the grease lubricant is hydrophobic.

30. The instrument of claim 26, wherein the instrument is characterized by the absence of a ball bearing assembly between the outer tube and the inner wire assembly.

31. The instrument of claim 26, wherein the inner wire assembly is a homogenous wire.

32. The instrument of claim 31, wherein the wire is a tool steel.

33. The instrument of claim 31, wherein the hydrodynamic bearing is established along an entirety of a length of the outer tube distal the housing.

34. The instrument of claim 31, wherein the outer tube defines a first curved segment and further wherein upon final assembly, the wire assumes a shape of the first curved segment.

35. The instrument of claim 31, wherein at least a portion of the outer tube distal the housing has a maximum outer diameter of not more than 2 mm.

36. The instrument of claim 31, wherein the wire has an outer diameter of not more than 0.8 mm.

37. The instrument of claim 31, wherein an exposed portion of the wire extends distally from the distal end of the outer tube, and further wherein a length of the exposed portion is not greater than 2.54 mm.

38. The instrument of claim 31, wherein the distal region of the outer tube tapers distally in diameter to the distal end.

39. The instrument of claim 26, further comprising:

a sealing tip connected to the distal region of the outer tube, at least a portion of the sealing tip defining an inner diameter that is less than a diameter of the lumen of the outer tube.

40. The instrument of claim 39, wherein the sealing tip is a ceramic body.

41. The instrument of claim 39, wherein the sealing tip is a tubular body having a proximal portion and a distal portion, the distal portion defining a relaxed state diameter that is less than a diameter of the inner wire assembly, and further wherein upon final assembly, the distal portion of the sealing tip is forced to an expanded state diameter via contact with the inner wire assembly.

42. The instrument of claim 39, wherein the sealing tip is a tubular body shrunk fit to the outer tube and a portion of the inner wire assembly.

43. The instrument of claim 26, further comprising:

a cooling sleeve disposed over at least a portion of the outer tube.

44. A surgical cutting instrument for use with a motor having a drive mechanism, the instrument comprising:

an outer tube defining a proximal region terminating at a proximal end, a distal region terminating at a distal end, and a lumen extending from the proximal end to the distal end, the lumen being defined by an inner surface of the outer tube;

an inner wire assembly received within the lumen, the inner wire assembly including a proximal section and a distal section, wherein the proximal section extends proximally from the proximal end of the outer tube, and further wherein the inner wire assembly is formed of a material exhibiting a fatigue strength of at least 75 Kpsi;

a cutting tip connected to the distal section of the inner wire assembly, wherein at least a portion of the cutting tip extends distal the distal end of the outer tube;

a coupling chuck secured to the proximal section of the inner wire assembly, wherein the coupling chuck is adapted for connection to a drive mechanism of a motor; and

a housing maintaining the proximal region of the outer tube and the coupling chuck, the housing being adapted for connection to a motor;

wherein a bearing is established between an outer surface of at least a portion of the inner wire assembly and at least a portion of the inner surface of the outer tube distal the housing upon rotation of the inner wire assembly relative to the outer tube.

45. The instrument of claim 44, wherein the inner wire assembly is formed of tool steel.

46. The instrument of claim 45, wherein the tool steel is an M-series tool steel.

47. The instrument of claim 46, wherein the tool steel is M2 tool steel.

48. The instrument of claim 44, wherein the outer tube and the inner wire assembly are formed of a metal processed to provide the fatigue strength.

49. The instrument of claim 48, wherein the metal is subjected to a roll burnishing process.

50. The instrument of claim 48, wherein the metal is subjected to one of ultrasonic shot peening and laser shot peening.

51. The instrument of claim 44, wherein the instrument is characterized by the absence of a ball bearing assembly between the outer tube and the inner wire assembly.

52. The instrument of claim 44, wherein a rotating journal bearing is established between an outer surface of the inner wire assembly and the inner surface of the outer tube upon rotation of the inner wire assembly relative to the outer tube.

53. The instrument of claim 44, wherein the inner wire assembly is a homogenous wire.

54. The instrument of claim 53, wherein the journal bearing is established along an entirety of a length of the outer tube distal the housing.

55. The instrument of claim 53, wherein the outer tube defines a first curved segment and further wherein upon final assembly, the spring wire assumes a shape of the first curved segment.

56. The instrument of claim 53, wherein at least a portion of the outer tube distal the housing has a maximum outer diameter of not more than 2 mm.

57. The instrument of claim 53, wherein the wire has an outer diameter of not more than 0.8 mm.

58. The instrument of claim 53, wherein an exposed portion of the wire extends distally from the distal end of the outer tube, and further wherein a length of the exposed portion is not greater than 2.54 mm.

59. The instrument of claim 53, wherein the distal region of the outer tube tapers distally in diameter to the distal end.

60. The instrument of claim 44, further comprising:

a sealing tip connected to the distal region of the outer tube, at least a portion of the sealing tip defining an inner diameter that is less than a diameter of the lumen of the outer tube.

61. The instrument of claim 60, wherein the sealing tip is a ceramic body.

62. The instrument of claim 60, wherein the sealing tip is a tubular body having a proximal portion and a distal portion, the distal portion defining a relaxed state diameter that is less than a diameter of the inner wire assembly, and further wherein upon final assembly, the distal portion of the sealing tip is forced to an expanded state diameter via contact with the inner wire assembly.

63. The instrument of claim 60, wherein the sealing tip is a tubular body shrunk fit to the outer tube and a portion of the inner wire assembly.

64. The instrument of claim 44, further comprising:

a cooling sleeve disposed over at least a portion of the outer tube.

65. A surgical cutting instrument for use with a motor having a drive mechanism, the instrument comprising:

an outer tube defining a proximal region terminating at a proximal end, a distal region terminating at a distal end, and a lumen extending from the proximal end to the distal end, the lumen being defined by an inner surface of the outer tube;

an inner wire assembly received within the lumen, the inner wire assembly including a proximal section and a distal section, wherein the proximal section extends proximally from the proximal end of the outer tube, and further wherein the inner wire assembly is characterized by a Rockwell Hardness of not less than 50 HRC;

a cutting tip connected to the distal section of the inner wire assembly, wherein at least a portion of the cutting tip extends distal the distal end of the outer tube;

a coupling chuck secured to the proximal section of the inner wire assembly, wherein the coupling chuck is adapted for connection to a drive mechanism of a motor; and

a housing maintaining the proximal region of the outer tube and the coupling chuck, the housing being adapted for connection to a motor;

wherein a bearing is established between an outer surface of at least a portion of the inner wire assembly and at least a portion of the inner surface of the outer tube distal the housing upon rotation of the inner wire assembly relative to the outer tube.

66. The instrument of claim 65, wherein an exterior surface of the inner wire assembly is coated with a hardened material.

67. The instrument of claim 66, wherein the hardened material is adapted to provide a dense carbon finish to the inner wire assembly.

68. The instrument of claim 67, wherein the hardened material is diamond-like carbon.

69. The instrument of claim 66, wherein the hardened material includes a material selected from the group consisting of zirconium nitride, chrome, fluorocarbon, titanium nitride, and electroless nickel impregnated with PTFE.

70. The instrument of claim 65, wherein the instrument is characterized by the absence of a ball bearing assembly between the outer tube and the inner wire assembly.

71. The instrument of claim 65, wherein a journal bearing is established between an outer surface of the inner wire assembly and the inner surface of the outer tube upon rotation of the inner wire assembly relative to the outer tube.

72. The instrument of claim 65, wherein the inner wire assembly is a homogenous wire.

73. The instrument of claim 72, wherein the spring wire is a tool steel.

74. The instrument of claim 72, wherein a rotating journal bearing is established along an entirety of a length of the outer tube distal the housing.

75. The instrument of claim 72, wherein the outer tube defines a first curved segment and further wherein upon final assembly, the wire assumes a shape of the first curved segment.

76. The instrument of claim 72, wherein at least a portion of the outer tube distal the housing has a maximum outer diameter of not more than 2 mm.

77. The instrument of claim 72, wherein the wire has an outer diameter of not more than 0.8 mm.

78. The instrument of claim 72, wherein the distal region of the outer tube tapers distally in diameter to the distal end.

79. The instrument of claim 65, further comprising:

a sealing tip connected to the distal region of the outer tube, at least a portion of the sealing tip defining an inner diameter that is less than a diameter of the lumen of the outer tube.

80. The instrument of claim 79, wherein the sealing tip is a ceramic body.

81. The instrument of claim 79, wherein the sealing tip is a tubular body having a proximal portion and a distal portion, the distal portion defining a relaxed state diameter that is less than a diameter of the inner wire assembly, and further wherein upon final assembly, the distal portion of the sealing tip is forced to an expanded state diameter via contact with the inner wire assembly.

82. The instrument of claim 79, wherein the sealing tip is a tubular body shrunk fit to the outer tube and a portion of the inner wire assembly.

83. The instrument of claim 65, further comprising:

a cooling sleeve disposed over at least a portion of the outer tube.

84. A surgical cutting instrument for use with a motor having a drive mechanism, the instrument comprising:

an outer tube defining a proximal region terminating at a proximal end, a distal region terminating at a distal end, and a lumen extending from the proximal end to the distal end, the lumen being defined by an inner surface of the outer tube, wherein the inner surface is highly polished, exhibiting a surface roughness of not more than 20μ inch RMS;

an inner wire assembly received within the lumen, the inner wire assembly including a proximal section and distal section, wherein the proximal section extends proximally from the proximal end of the outer tube;

a cutting tip connected to the distal section of the inner wire assembly, wherein at least a portion of the cutting tip extends distal the distal end of the outer tube;

a coupling chuck secured to the proximal section of the inner wire assembly, wherein the coupling chuck is adapted for connection to a drive mechanism of a motor; and

a housing maintaining the proximal region of the outer tube and the coupling chuck, the housing being adapted for connection to a motor;

wherein a bearing is established between an outer surface of at least a portion of the inner wire assembly and at least a portion of the inner surface of the outer tube distal the housing upon rotation of the inner wire assembly relative to the outer tube.

85. The instrument of claim 84, wherein the instrument is characterized by the absence of a ball bearing assembly between the outer tube and the inner wire assembly.

86. The instrument of claim 84, wherein a rotational journal bearing is established between an outer surface of the inner wire assembly and the inner surface of the outer tube upon rotation of the inner wire assembly relative to the outer tube.

87. The instrument of claim 86, further comprising:

a lubricant disposed between the outer surface of the inner wire assembly and the inner surface of the outer tube;

wherein upon rotation of the inner wire assembly relative to the outer tube, the lubricant is adapted to create a hydrodynamic effect.

88. The instrument of claim 84, wherein the inner wire assembly is a homogenous wire.

89. The instrument of claim 88, wherein the wire is a tool steel.

90. The instrument of claim 88, wherein the journal bearing is established along an entirety of a length of the outer tube distal the housing.

91. The instrument of claim 88, wherein the outer tube defines a first curved segment and further wherein upon final assembly, the wire assumes a shape of the first curved segment.

92. The instrument of claim 88, wherein at least a portion of the outer tube distal the housing has a maximum outer diameter of not more than 2 mm.

93. The instrument of claim 88, wherein the wire has an outer diameter of not more than 0.8 mm.

94. The instrument of claim 88, wherein the distal region of the outer tube tapers distally in diameter to the distal end.

95. The instrument of claim 84, further comprising:

a sealing tip connected to the distal region of the outer tube, at least a portion of the sealing tip defining an inner diameter that is less than a diameter of the lumen of the outer tube.

96. The instrument of claim 95, wherein the sealing tip is a ceramic body.

97. The instrument of claim 95, wherein the sealing tip is a tubular body having a proximal portion and a distal portion, the distal portion defining a relaxed state diameter that is less than a diameter of the inner wire assembly, and further wherein upon final assembly, the distal portion of the sealing tip is forced to an expanded state diameter via contact with the inner wire assembly.

98. The instrument of claim 95, wherein the sealing tip is a tubular body shrunk fit to the outer tube and a portion of the inner wire assembly.

99. The instrument of claim 84, further comprising:

a cooling sleeve disposed over at least a portion of the outer tube.

100. A surgical instrument for use with a motor having a drive, mechanism, the instrument comprising:

an outer tube defining a proximal region terminating at a proximal end, a distal region terminating at a distal end, and a lumen extending from the proximal end to the distal end, the lumen being defined by an inner surface of the outer tube;

an inner wire assembly received within the lumen, the inner wire assembly including a proximal section and distal section, wherein the proximal section extends proximally from the proximal end of the outer tube;

a cutting tip connected to the distal section of the inner wire assembly, wherein at least a portion of the cutting tip extends distal the distal end of the outer tube;

a coupling chuck secured to the proximal section of the inner wire assembly, wherein the coupling chuck is adapted for connection to a drive mechanism of a motor; and

a housing maintaining the proximal region of the outer tube and the coupling chuck, the housing being adapted for connection to a motor, wherein at least a portion of the outer tube distal the housing has a maximum outer diameter of not more than 2 mm;

wherein a bearing is established between an outer surface of at least a portion of the inner wire assembly and at least a portion of the inner surface of the outer tube distal the housing upon rotation of the inner wire assembly relative to the outer tube;

and further wherein the instrument is configured to allow rotation of the inner wire assembly relative to the outer tube at a speed of 80,000 RPM without failure of the bearing.

101. The instrument of claim 100, wherein the instrument is characterized by the absence of a ball bearing assembly between the outer tube and the inner wire assembly.

102. The instrument of claim 100, wherein a rotating journal bearing is established between an outer surface of the inner wire assembly and the inner surface of the outer tube upon rotation of the inner wire assembly relative to the outer tube.

103. The instrument of claim 102, further comprising:

a lubricant disposed between the outer surface of the inner wire assembly and the inner surface of the outer tube;

wherein upon rotation of the inner wire assembly relative to the outer tube, the lubricant is adapted to create a hydrodynamic effect.

104. The instrument of claim 100, wherein the inner wire assembly is a homogenous wire.

105. The instrument of claim 104, wherein the wire is a tool steel.

106. The instrument of claim 104, wherein the journal bearing is established along an entirety of a length of the outer tube distal the housing.

107. The instrument of claim 104, wherein the outer tube defines a first curved segment and further wherein upon final assembly, the wire assumes a shape of the first curved segment.

108. The instrument of claim 104, wherein the wire has an outer diameter of not more than 0.8 mm.

109. The instrument of claim 104, wherein an exposed portion of the spring wire extends distally from the distal end of the outer tube, and further wherein the exposed portion has a length of not more than 2.54 mm.

110. The instrument of claim 104, wherein the distal region of the outer tube tapers distally in diameter to the distal end.

111. The instrument of claim 100, further comprising:

a sealing tip connected to the distal region of the outer tube, at least a portion of the sealing tip defining an inner diameter that is less than a diameter of the lumen of the outer tube.

112. The instrument of claim 111, wherein the sealing tip is a ceramic body.

113. The instrument of claim 111, wherein the sealing tip is a tubular body having a proximal portion and a distal portion, the distal portion defining a relaxed state diameter that is less than a diameter of the inner wire assembly, and further wherein upon final assembly, the distal portion of the sealing tip is forced to an expanded state diameter via contact with the inner wire assembly.

114. The instrument of claim 111, wherein the sealing tip is a tubular body shrunk fit to the outer tube and a portion of the inner wire assembly.

115. The instrument of claim 100, further comprising:

a cooling sleeve disposed over at least a portion of the outer tube.

116. A surgical cutting instrument for use with a motor having a drive mechanism, the instrument comprising:

an outer tube defining a proximal region terminating at a proximal end, a distal region terminating at a distal end, and a lumen extending from the proximal end to the distal end, the lumen being defined by an inner surface of the outer tube;

an inner wire assembly received within the lumen, the inner wire assembly including a proximal section and distal section, wherein the proximal section extends proximally from the proximal end of the outer tube;

a cutting tip connected to the distal section of the inner wire assembly, wherein at least a portion of the cutting tip extends distal the distal end of the outer tube;

a coupling chuck secured to the proximal section of the inner wire assembly, wherein the coupling chuck is adapted for connection to a drive mechanism of a motor; and

a housing maintaining the proximal region of the outer tube and the coupling chuck, the housing being adapted for connection to a motor;

wherein the outer tube exhibits a stiffness of not less than 15 lbf/inch at the distal end relative to a distal point of interface between the outer tube and the housing;

and further wherein a bearing is established between an outer surface of at least a portion of the inner wire assembly and at least a portion of the inner surface of the outer tube distal the housing upon rotation of the inner wire assembly relative to the outer tube.

117. The instrument of claim 116, wherein the instrument is characterized by the absence of a ball bearing assembly between the outer tube and the inner wire assembly.

118. The instrument of claim 116, wherein a rotating journal bearing is established between an outer surface of the inner wire assembly and the inner surface of the outer tube upon rotation of the inner wire assembly relative to the outer tube.

119. The instrument of claim 116, wherein the inner wire assembly is a homogenous wire.

120. The instrument of claim 119, wherein the wire is a tool steel.

121. The instrument of claim 119, wherein the journal bearing is established along an entirety of a length of the outer tube distal the housing.

122. The instrument of claim 119, wherein the outer tube defines a first curved segment and further wherein upon final assembly, the wire assumes a shape of the first curved segment.

123. The instrument of claim 119, wherein at least a portion of the outer tube distal the housing has a maximum outer diameter of not more than 2 mm.

124. The instrument of claim 119, wherein the distal region of the outer tube tapers distally in diameter to the distal end.

125. The instrument of claim 116, further comprising:

a sealing tip connected to the distal region of the outer tube, at least a portion of the sealing tip defining an inner diameter that is less than a diameter of the lumen of the outer tube.

126. The instrument of claim 125, wherein the sealing tip is a ceramic body.

127. The instrument of claim 125, wherein the sealing tip is a tubular body having a proximal portion and a distal portion, the distal portion defining a relaxed state diameter that is less than a diameter of the inner wire assembly, and further wherein

upon final assembly, the distal portion of the sealing tip is forced to an expanded state diameter via contact with the inner wire assembly.

128. The instrument of claim 125, wherein the sealing tip is a tubular body shrunk fit to the outer tube and a portion of the inner wire assembly.

129. The instrument of claim 116, further comprising:

a cooling sleeve disposed over at least a portion of the outer tube.

130. A surgical cutting instrument for use with a motor having a drive mechanism, the instrument comprising:

an outer tube defining a proximal region terminating at a proximal end, a distal region terminating at a distal end, and a lumen extending from the proximal end to the distal end, the lumen being defined by an inner surface of the outer tube, wherein the inner surface is highly polished, exhibiting a surface roughness of not greater than 20μ inch RMS;

an inner wire assembly received within the lumen, the inner wire assembly including a proximal section and distal section, wherein the proximal section extends proximally from the proximal end of the outer tube, wherein the inner wire assembly is formed to exhibit a fatigue strength of at least 75 Kpsi and a hardness of not less than 50 HRC;

a grease lubricant disposed between the inner surface of the outer tube and an outer surface of the inner wire assembly, the grease lubricant exhibiting a dynamic viscosity of not less than 100 mm^2/s at 40° C;

a cutting tip connected to the distal section of the inner wire assembly, wherein at least a portion of the cutting tip extends distal the distal end of the outer tube;

a coupling chuck secured to the proximal section of the inner wire assembly, wherein the coupling chuck is adapted for connection to a drive mechanism of a motor; and

a housing maintaining the proximal region of the outer tube and the coupling chuck, the housing being adapted for connection to a motor, wherein at least a portion of the outer tube distal the housing has a maximum outer diameter of not more than 2 mm;

wherein the outer tube exhibits a stiffness of not less than 15 lbf/inch at the distal end relative to a distal point of interface between the outer tube and the housing;

and further wherein a hydrodynamic, rotating journal bearing is established between an outer surface of at least a portion of the inner wire assembly and at least a portion of the inner surface of the outer tube distal the housing upon rotation of the inner wire assembly relative to the outer tube;

and further wherein the instrument is configured to allow rotation of the inner wire assembly relative to the outer tube at a speed of 80,000 RPM without failure of the journal bearing.

131. The instrument of claim 130, wherein the instrument is characterized by the absence of a ball bearing assembly between the outer tube and the inner wire assembly.

132. The instrument of claim 130, wherein the inner wire assembly is a homogenous wire.

133. The instrument of claim 132, wherein the outer tube defines a first curved segment and further wherein upon final assembly, the wire assumes a shape of the first curved segment.

134. The instrument of claim 132, wherein the wire is formed of a tool steel material.

135. The instrument of claim 130, further comprising:

a sealing tip connected to the distal region of the outer tube, at least a portion of the sealing tip defining an inner diameter that is less than a diameter of the lumen of the outer tube.

136. The instrument of claim 135, wherein the sealing tip is a ceramic body.

137. The instrument of claim 135, wherein the sealing tip is a tubular body having a proximal portion and a distal portion, the distal portion defining a relaxed state diameter that is less than a diameter of the inner wire assembly, and further wherein upon final assembly, the distal portion of the sealing tip is forced to an expanded state diameter via contact with the inner wire assembly.

138. The instrument of claim 135, wherein the sealing tip is a tubular body shrunk fit to the outer tube and a portion of the inner wire assembly.

139. The instrument of claim 130, further comprising:

a cooling sleeve disposed over at least a portion of the outer tube.

140. A method of performing a surgical drilling procedure on tissue at a target site of a patient, the method comprising:

providing a surgical cutting instrument including an outer tube, an inner wire assembly, and a cutting tip, the outer tube defining a curved segment, the inner wire assembly being rotatably disposed within the outer

tube, and the cutting tip being connected to the inner wire assembly and positioned distal a distal end of the outer tube;

exposing the tissue at the target site;

deploying the cutting tip against the tissue; and

rotating the inner wire assembly relative to the outer tube at speeds in excess of 50,000 RPM such that the cutting tip removes contacted tissue.

141. The method of claim 140, wherein at least a portion of the outer tube has a maximum outer diameter of not more than 2 mm.

142. The method of claim 140, wherein rotating the inner wire assembly to remove contacted tissue includes visually observing contact between the cutting tip and the tissue.

143. The method of claim 140, wherein the method is performed as part of a neuro-otological procedure.

144. The method of claim 140, wherein the method is performed as part of a procedure selected from the group consisting of cochlear implant, cochleostomy, tympanoplasty, ossicular chain reconstruction, acoustic neuroma surgery, petrous apex cyst drainage, mastoidectomy, sinus surgery, vertebral bone spur removal, arthritic bone spur removal, spinal disc surgery, knee surgery, hip surgery, and orthopedic surgery.